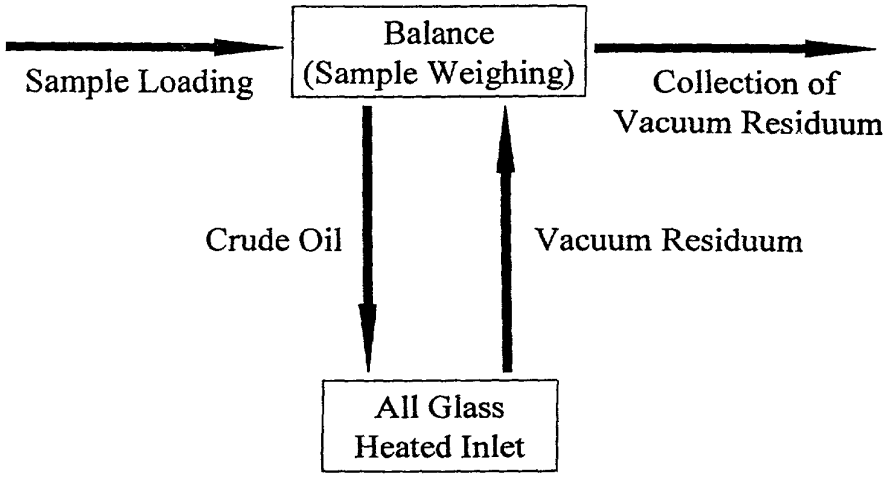
Balance
(Sample Weighing)
Sample Loading
Collection of
Vacuum Residuum
Crude Oil
Vacuum Residuum
All Glass
Heated Inlet

FIG. 1

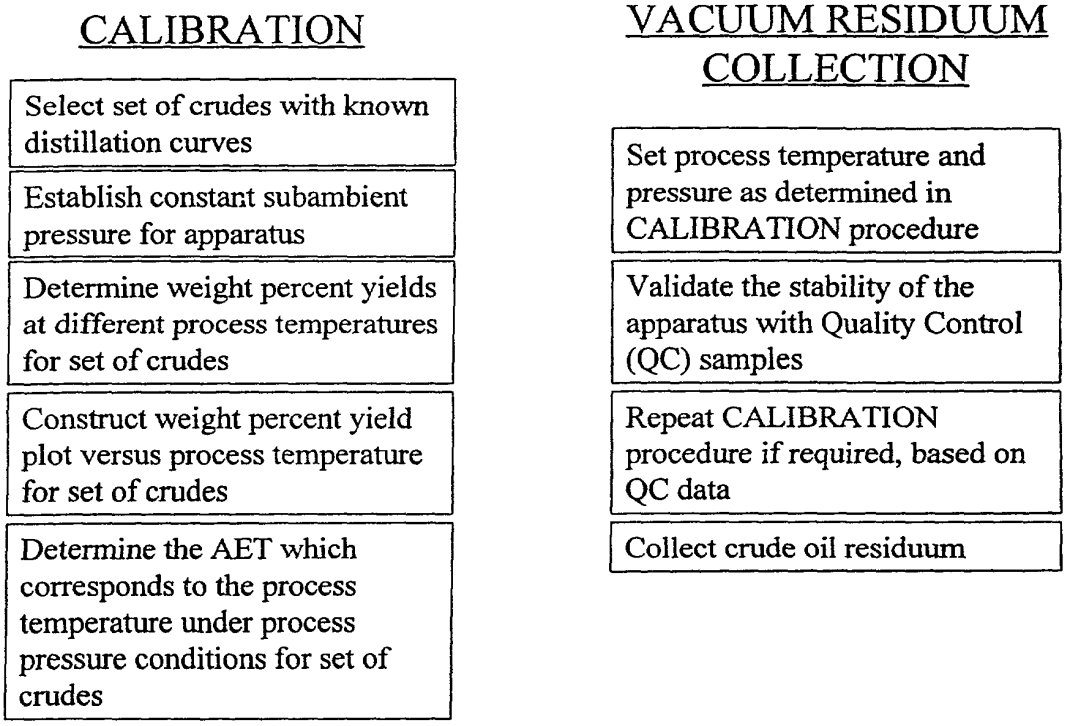
CALIBRATION
Select set of crudes with known distillation curves
Establish constant subambient pressure for apparatus
Determine weight percent yields at different process temperatures for set of crudes
Construct weight percent yield plot versus process temperature for set of crudes
Determine the AET which corresponds to the process temperature under process pressure conditions for set of crudes
VACUUM RESIDUUM COLLECTION
Set process temperature and pressure as determined in CALIBRATION procedure
Validate the stability of the apparatus with Quality Control (QC) samples
Repeat CALIBRATION procedure if required, based on QC data
Collect crude oil residuum

FIG. 2

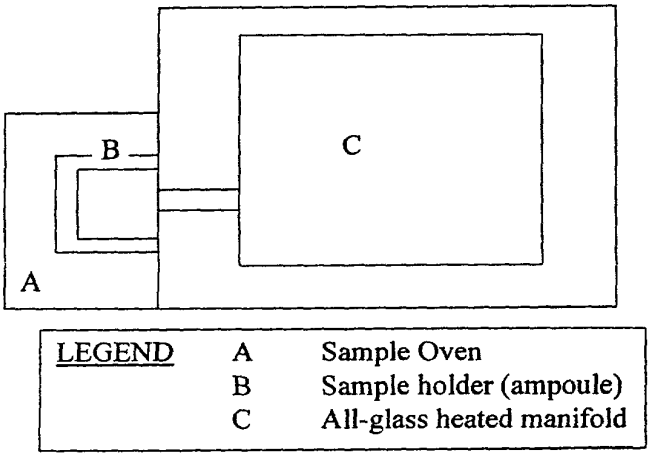
B
C
A
LEGEND
A Sample Oven
B Sample holder (ampoule)
C All-glass heated manifold

FIG. 3

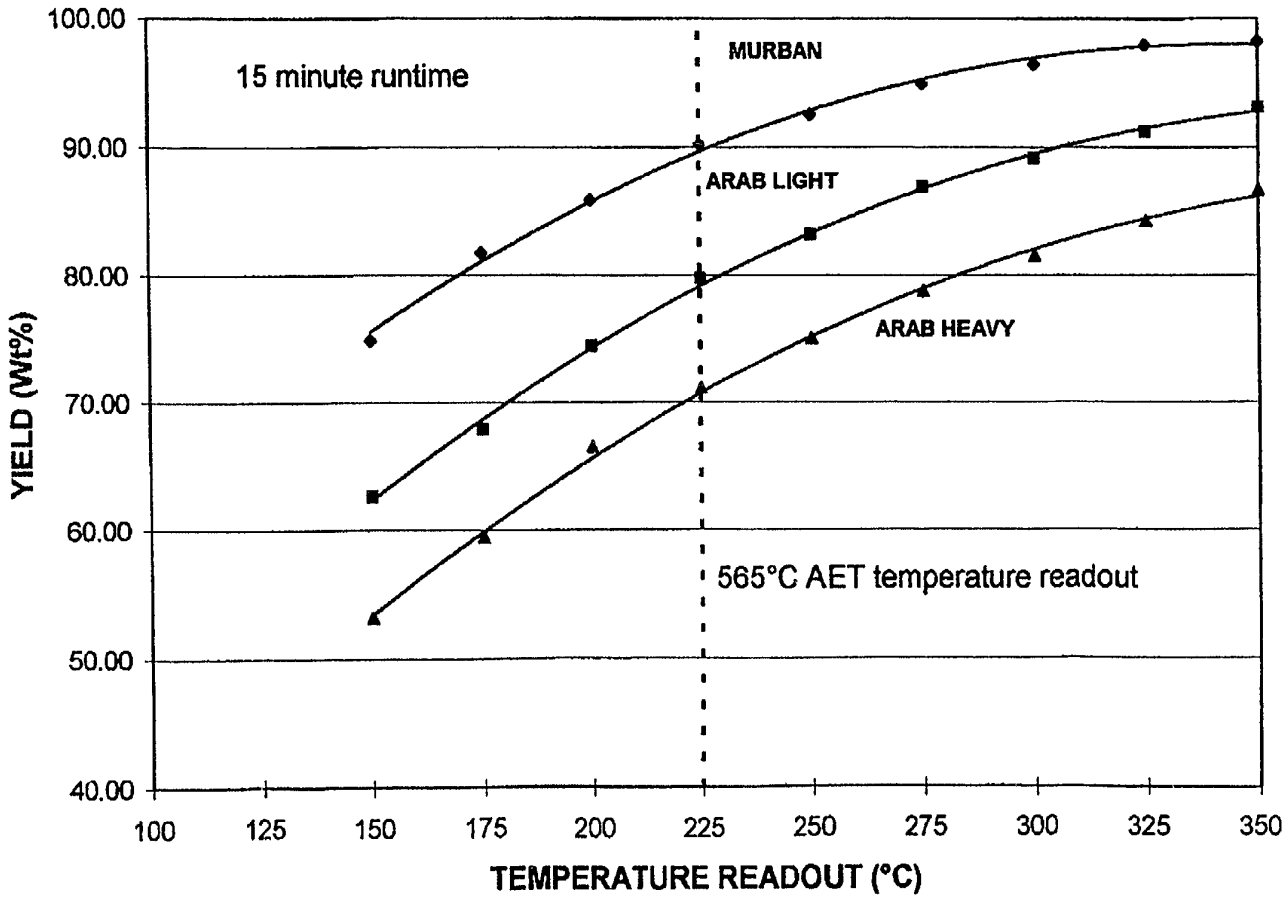
15 minute runtime
MURBAN
ARAB LIGHT
ARAB HEAVY
565°C AET temperature readout
YIELD (Wt%)
100.00
90.00
80.00
70.00
60.00
50.00
40.00
100
125
150
175
200
225
250
275
300
325
350
TEMPERATURE READOUT (°C)

FIG. 4

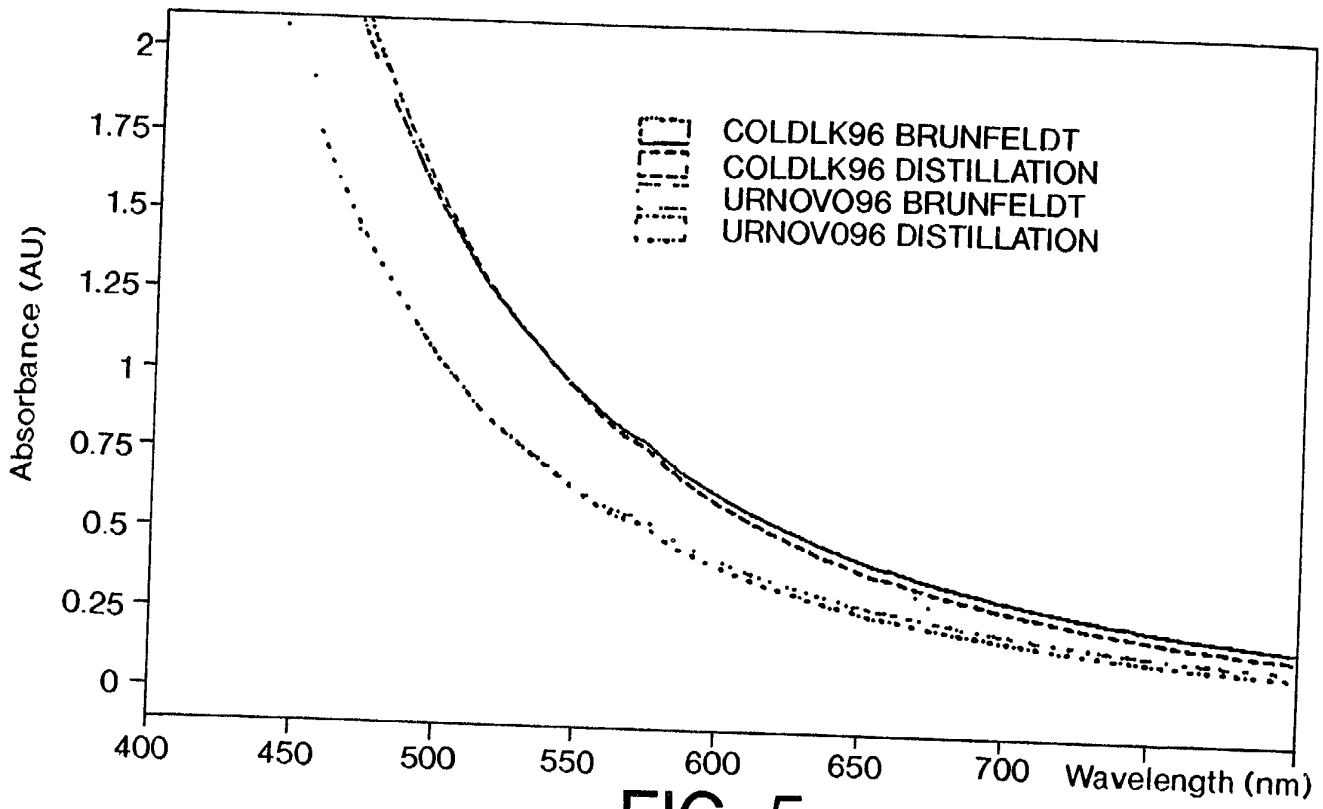
COLDLK96 BRUNFELDT
COLDLK96 DISTILLATION
URNOV096 BRUNFELDT
URNOV096 DISTILLATION
Absorbance (AU)
2
1.75
1.5
1.25
1
0.75
0.5
0.25
0
400
450
500
550
600
650
700
Wavelength (nm)

FIG. 5

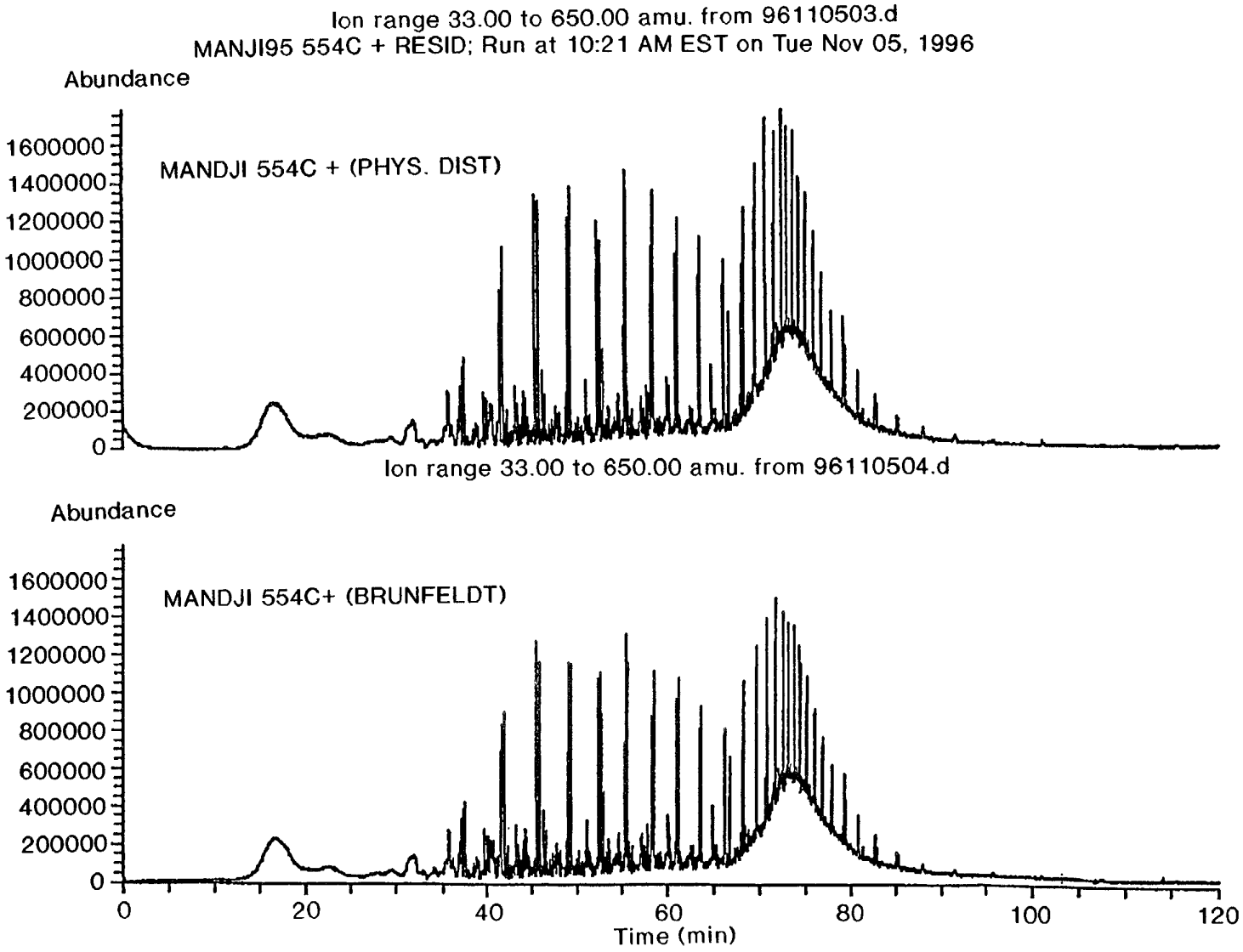
Ion range 33.00 to 650.00 amu. from 96110503.d
MANJI95 554C + RESID; Run at 10:21 AM EST on Tue Nov 05, 1996
Abundance
MANDJI 554C + (PHYS. DIST)
1600000
1400000
1200000
1000000
800000
600000
400000
200000
0
Ion range 33.00 to 650.00 amu. from 96110504.d
Abundance
MANDJI 554C+ (BRUNFELDT)
1600000
1400000
1200000
1000000
800000
600000
400000
200000
0
0
20
40
60
80
100
120
Time (min)

FIG. 6